



INDIANA DEPARTMENT OF TRANSPORTATION

STANDARDS COMMITTEE MEETING MINUTES

Driving Indiana's Economic Growth

March 16, 2007

MEMORANDUM

TO: Standards Committee

FROM: Dannie L. Smith, Secretary

RE: Minutes for the March 15, 2007 Standards Committee Meeting

The Standards Committee meeting was called to order by the Acting Chairman at 9:05 a.m. on March 15, 2007 in the N755 Bay Window Conference Room. The meeting was adjourned at 10:40 a.m.

The following members were in attendance:

Bob Cales, Acting Chairman	John Wright, Roadway Services
Humail Khan, Crawfordsville Dist.	Dave Andrews, Pvmt. Engineering
Ron Heustis, Constr. Management	Jim Keefer, Ft. Wayne Dist.
Dennis Kuchler, State Constr. Engr.	Anne Rearick, Structural Services
Larry Rust, Traffic Control	Ron Walker, Materials Mgmt.

Also in attendance were the following:

Dan Smith, Secretary,	Ed Ratulowski, FHWA
Deb Hood INDOT	David Unkefer, FHWA
Elizabeth Zurawska, INDOT	Paul Berebitsky, ICA

New Business

Item 18-1	Mr. Kuchler	03/15/07	4
110.02	Limitations	100-96	
110.04	Basis of Payment	100-96	
Action:	Passed as submitted		
Item 18-2	Mr. Kuchler	03/15/07	5
203.03	Rock Excavation	200-20	
Action:	Withdrawn		
Item 18-3	Ms. Rearick	03/15/07	6
Policy Change	Historic Bridge Rehab		
Action:	Passed as submitted		

Item 18-4 501.12 Action:	Mr. Heustis Placement Passed as submitted	03/15/07 500-5	7
Item 18-5 501.25 Action:	Mr. Heustis Pavement Smoothness Passed as submitted	03/15/07 500-9	8
Item 18-6 501.28(c) Action:	Mr. Heustis Thickness Passed as submitted	03/15/07 500-13	9
Item 18-7 502.09 Action:	Mr. Heustis Placement Passed as submitted	03/15/07 500-20	10
Item 18-8 503.01 503.02 503.04 503.07 Action:	Mr. Heustis Description Materials Dowel Bar Assemblies Method of Measurement Passed as revised	03/15/07 500-28 500-28 500-30 500-32	11
Item 18-9 506.10(b) Action:	Mr. Heustis Full Depth Passed as submitted	03/15/07 500-42	12
Item 18-10 Policy Change Action:	Mr. Wright W-Beam Guardrail Post Withdrawn	03/15/07	13
Item 18-11 Standard Drawings Action:	Mr. Wright 601-WBGA-01 & 03 Withdrawn	03/15/07	14
Item 18-12 601.02 601.13 601.14 Action:	Mr. Wright Materials Method of Measurement Basis of Payment Withdrawn	03/15/07 66-1	15
Item 18-13 Standard Drawings Action:	Mr. Wright 614-RRGC-01 thru 05 Withdrawn	03/15/07	16
Item 18-14 614 Action:	Mr. Wright CONCRETE HEADERS Withdrawn	03/15/07 600-39	17
Item 18-15 Standard Drawings Action:	Ms. Rearick 707-BEBP-01, 02 & 03 Passed as submitted	3/15/07	19
Item 18-16 710 Action:	Ms. Rearick <i>PATCHING CONCRETE STRUCTURES AND</i> <i>REPOINTING MASONRY IN STRUCTURES</i> Passed as submitted	03/15/07 700-71	20
Item 18-17 722.05(a)2 Action:	Ms. Rearick Bridge Floor Passed as submitted	03/15/07 700-139	24

Item 18-18	Mr. Heustis	3/15/07	26
801.10	Temporary Traffic Barriers	800-7	
Action:	Passed as submitted		
Item 18-19	Mr. Kuchler	3/15/07	27
105.17	Field Office	100-44	
Action:	Passed as submitted		

cc: Committee Members (11)
 FHWA (4)
 ICA Representative (1)

REVISION TO 2006 STANDARD SPECIFICATIONS

SECTION 110, BEGIN LINE 9, DELETE AND INSERT AS FOLLOWS:

110.02 Limitations

For the purpose of payment, the mobilization portion of this work will be limited to 5% of the original total contract price. The remainder of the work will be considered demobilization. The first progress estimate will include a percentage payment of the pay item for mobilization and demobilization that is ~~no more than~~ *equal to the lesser of 5% of the original total contract price or the contract lump sum price for the pay item mobilization and demobilization. The exact amount will be a portion of the lump sum price which is an even percentage of the pay item.* The balance of the lump sum price will be paid when the contract has been completed and accepted.

SECTION 110, BEGIN LINE 31, INSERT AS FOLLOWS:

The cost of all materials, equipment, tools, labor, transportation, operations, and incidentals *required for mobilization and demobilization* shall be included in the cost of this work.

Other sections containing specific cross references:	General Instructions to Field Employees
	Update Required? No
	By - Addition or Revision
None	Frequency Manual
	Update Required? No
	By - Addition or Revision
Recurring Special Provisions potentially affected:	Standard Sheets potentially affected:
None	None
Motion: Mr. Kuchler	Action: Passed as submitted
Second: Mr. Keefer	Effective:
Ayes: 9	<u> x </u> 2009 Standards Specifications Book
Nays: 0	<u> </u> 2009 Standards Edition

Received FHWA Approval? Yes

REVISION TO 2006 STANDARD SPECIFICATIONS

SECTION 203, BEGIN LINE 15, DELETE AND INSERT AS FOLLOWS:

203.03 Rock Excavation

Rock excavation shall consist of igneous, metamorphic, and sedimentary rock which cannot be excavated without blasting; ~~the use of a power shovel of not less than 1 cu yd (0.76 m³) capacity, properly used, having adequate power and in satisfactory running condition; or the use of other equivalent powered equipment or using rippers.~~ *The District Geologist will be notified and will inspect the material to verify it meets the requirements set out herein. This verification must be received prior to the beginning of the removal operations.* Rock excavation shall also include all boulders or other detached stones each having a volume of ~~1/2 cu yd (0.4 m³)~~ 2.5 cu yd (2 m³) or more.

Other sections containing
specific cross references:

203.07, Pg 200-20
203.15, Pg 200-27

General Instructions to Field Employees

Update Required? Y___ N___

By - Addition or Revision

Frequency Manual

Update Required? Y___ N___

By - Addition or Revision

Recurring Special Provisions
potentially affected:

None

Standard Sheets potentially affected:

None

Motion: M
Second: M
Ayes:
Nays:

Action: Withdrawn

POLICY CHANGE

The following Design Memorandum establishes a procedure for rehabilitating a historic bridge on a local road.

Other sections containing specific cross references:	General Instructions to Field Employees Update Required? No By - Addition or Revision Frequency Manual Update Required? No By - Addition or Revision
None	
Recurring Special Provisions potentially affected:	Standard Sheets potentially affected:
None	None
Motion: Ms. Rearick Second: Mr. Andrews Ayes: 9 Nays: 0	Action: Passed as submitted Effective: Immediately

Received FHWA Approval? Yes

REVISION TO 2006 STANDARD SPECIFICATIONS

SECTION 501, BEGIN LINE 202, DELETE AS FOLLOWS:

501.12 Placement

Placement of PCCP shall be by the slipformed or formed methods with equipment specified in 508.04. The subgrade or subbase shall be uniformly moist at the time of PCCP placement. Excessively dry subgrade or subbase shall be sprinkled with water. ~~Dowel bars shall be coated with a bond breaking material and the coating shall be evident at the time of placement.~~

Other sections containing
specific cross references:

None

General Instructions to Field Employees

Update Required? No

By - Addition or Revision

Frequency Manual

Update Required? No

By - Addition or Revision

Recurring Special Provisions
potentially affected:

None

Standard Sheets potentially affected:

None

Motion: Mr. Heustis

Second: Mr. Keefer

Ayes: 8

Nays: 0

Action: Passed as submitted

Effective:

 x 2009 Standards Specifications Book

 2009 Standards Edition

Received FHWA Approval? Yes

REVISION TO 2006 STANDARD SPECIFICATIONS

SECTION 501, BEGIN LINE 396, DELETE AND INSERT AS FOLLOWS:

When the profilograph is ~~being~~ used, the pavement variations shall be corrected to ~~a profile index of 12.0 in./0.1 mi (30 mm/0.16 km) or less~~ in accordance with 501.28(d). In addition to the requirements for the profile index, all areas having a high or low points deviation in excess of 0.3 in. (8 mm) shall be corrected. Verifying profilograph measurements will be taken only in the 0.1 mi (0.16 km) length where corrections have been performed.

Other sections containing specific cross references:	General Instructions to Field Employees
	Update Required? No
	By - Addition or Revision
502.20, Pg 500-24	Frequency Manual
507.06, Pg 500-46	Update Required? No
	By - Addition or Revision
Recurring Special Provisions potentially affected:	Standard Sheets potentially affected:
500-R-529	None
Motion: Mr. Heustis	Action: Passed as submitted
Second: Mr. Keefer	Effective:
Ayes: 9	<u> x </u> 2009 Standards Specifications Book
Nays: 0	<u> </u> 2009 Standards Edition

Received FHWA Approval? Yes

REVISION TO 2006 STANDARD SPECIFICATIONS

SECTION 501, BEGIN LINE 542, DELETE AND INSERT AS FOLLOWS:

(c) Thickness

When test results for pavement thickness do not meet the specified thickness, a pay factor will be assessed as follows:

Sublot Pay Factors For Thickness	
Average Core depth (ACD) Design Depth (DD)	
ACD Minus DD	Pay Factor
> + 0.5 in. (> + 13 mm)	1.05
+ 0.3 in. to 0.5 in. (+ 7 mm to + 13 mm)	1.02
± 0.2 in. (6 mm)	1.00
- 0.3 in. to - 0.5 in. (- 6 7 mm to - 13 mm)	0.96
- 0.6 in. to - 0.7 in. (- 14 mm to - 19 mm)	0.90
- 0.8 in. to - 1.0 in. - 20 mm to - 25 mm)	0.80
< - 1.00 in. (< - 25 mm)	*

- * The PCCP will be adjudicated as a failed material in accordance with normal Department practice as listed in 105.03. The PCCP may be subject to removal and replacement or left in place with reduced or no payment.

Other sections containing
specific cross references:

109.05.1, Pg 100-94
501.27(c), Pg 500-10
501.27(d), Pg 500-10

General Instructions to Field Employees

Update Required? No

By - Addition or Revision

Frequency Manual

Update Required? No

By - Addition or Revision

Recurring Special Provisions
potentially affected:

None

Standard Sheets potentially affected:

None

Motion: Mr. Heustis
Second: Mr. Andrews
Ayes: 9
Nays: 0

Action: Passed as submitted

Effective:

 x 2009 Standards Specifications Book

 2009 Standards Edition

Received FHWA Approval? Yes

REVISION TO 2006 STANDARD SPECIFICATIONS

SECTION 502, BEGIN LINE 172, DELETE AS FOLLOWS:

502.09 Placement

Placement of PCCP shall be by the slipformed or formed methods with equipment specified in 508.04. The subgrade or subbase shall be uniformly moist at the time of PCCP placement. Excessively dry subgrade or subbase shall be sprinkled with water. ~~Dowel bars shall be coated with a bond breaking material and the coating shall be evident at the time of placement.~~

Other sections containing
specific cross references:

None

General Instructions to Field Employees

Update Required? No

By - Addition or Revision

Frequency Manual

Update Required? No

By - Addition or Revision

Recurring Special Provisions
potentially affected:

None

Standard Sheets potentially affected:

None

Motion: Mr. Heustis

Second: Mr. Keefer

Ayes: 8

Nays: 0

Action: Passed as submitted

Effective:

 x 2009 Standards Specifications Book

 2009 Standards Edition

Received FHWA Approval? Yes

REVISION TO 2006 STANDARD SPECIFICATIONS

SECTION 503, BEGIN LINE 3, DELETE AND INSERT AS FOLLOWS:

503.01 Description

~~The construction of PCCP joints, dowel bar assemblies, and joint sealing operations shall be in accordance with the following. This work shall consist of the construction of joints in PCC pavements, placing dowel bar assemblies and joint sealing operations in accordance with 105.03.~~

SECTION 503, LINE 11, INSERT AS FOLLOWS:

Chemical Anchor System901.05

SECTION 503, BEGIN LINE 138, INSERT AS FOLLOWS:

(g) After the dowel bar assembly is securely in place, all tie wires which parallel the dowel bars, and are welded to the two continuous parallel spacer bars, shall be cut near the center of the tie. *Dowel bars shall be coated with a bond breaking material and the coating shall be evident at the time of placement of the PCCP.*

SECTION 503, BEGIN LINE 217, DELETE AND INSERT AS FOLLOWS:

503.07 Method of Measurement

D-1 contraction joints and terminal joints will be measured by the linear foot (meter) *as measured along the centerline of the joint.* ~~The pay length for terminal joints will equal the width of the PCCP.~~

Other sections containing
specific cross references:

None

General Instructions to Field Employees

Update Required? No

By - Addition or Revision

Frequency Manual

Update Required? No

By - Addition or Revision

Recurring Special Provisions
potentially affected:

None

Standard Sheets potentially affected:

None

Motion: Mr. Heustis

Second: Mr. Keefer

Ayes: 8

Nays: 0

Action: Passed as revised

Effective:

 x 2009 Standards Specifications Book

 2009 Standards Edition

Received FHWA Approval? Yes

REVISION TO 2006 STANDARD SPECIFICATIONS

SECTION 506, BEGIN LINE 247, DELETE AS FOLLOWS:

random crack. Patches greater than 18 ft (5.5 m) shall have type D-1 contraction joints in accordance with 503.03(a).

Other sections containing specific cross references:	General Instructions to Field Employees
	Update Required? No
None	By - Addition or Revision
	Frequency Manual
	Update Required? No
	By - Addition or Revision
Recurring Special Provisions potentially affected:	Standard Sheets potentially affected:
None	None
Motion: Mr. Heustis	Action: Passed as submitted
Second: Mr. Keefer	Effective:
Ayes: 8	<u> x </u> 2009 Standards Specifications Book
Nays: 0	<u> </u> 2009 Standards Edition

Received FHWA Approval? Yes

POLICY CHANGE

EMBEDMENT OF W-BEAM GUARDRAIL POST ON GRADED SHOULDER

DESIGN MEMORANDUM No. 06-XX
POLICY CHANGE

TO: All Design, Operations, and District Personnel, and Consultants

FROM: Richard L. VanCleave
Design Policy Engineer
Office of Roadway Engineering Services

SUBJECT: Embedment of W-Beam Guardrail Post on Graded Shoulder

EFFECTIVE: XXXXX, 2007 Letting

REPLACES: Design Manual Section 49-05(04)

The policy relating to required guardrail post embedment length on a graded shoulder has been changed. An 8'-0" long W-Beam guardrail post is required for certain situations where inadequate foundation support behind the standard 7'-0" long post will exist after initial post placement.

Design Memorandum 06-XX Technical Advisory regarding the use of a standard 7'-0" long or an 8'-0" long W-Beam guardrail post has been prepared. An interim design procedure to replace Section 49-5.01(04) of the Indiana Design Manual and the affected standard drawings that required appropriate revisions have been attached to the above technical advisory.

Other sections containing
specific cross references:

None

General Instructions to Field Employees

Update Required? Y___ N___

By - Addition or Revision

Frequency Manual

Update Required? Y___ N___

By - Addition or Revision

Recurring Special Provisions
potentially affected:

None

Standard Sheets potentially affected:

See Item 18-11

Motion: M
Second: M
Ayes:
Nays:

Action: Withdrawn

STANDARD DRAWINGS

The following Standard Drawings are being revised:

601-WBGA-01, W-Beam Guardrail Assemblies
601-WBGC-03, W-Beam Guardrail Components

Other sections containing specific cross references:	General Instructions to Field Employees Update Required? Y___ N___ By - Addition or Revision
None	Frequency Manual Update Required? Y___ N___ By - Addition or Revision
Recurring Special Provisions potentially affected:	Standard Sheets potentially affected:
None	See Above
Motion: M Second: M Ayes: Nays:	Action: Withdrawn

REVISION TO 2006 STANDARD SPECIFICATIONS

SECTION 601, BEGIN LINE 52, INSERT AS FOLLOWS:

7 ft (2130 mm) posts, 6 ft (1830 mm) posts may be substituted when approved. *Where shown on the plans or as directed, 8 ft (2440 mm) guardrail posts shall be installed.*

SECTION 601, AFTER LINE 252, INSERT AS FOLLOWS:

Eight foot (2440 mm) W-beam guardrail posts will be measured per each installed.

SECTION 601, AFTER LINE 277, INSERT AS FOLLOWS:

Eight foot (2440 mm) W-beam guardrail posts will be paid for at the contract unit price per each.

SECTION 601, AFTER LINE 286, INSERT AS FOLLOWS:

Guardrail Posts, W-Beam, 8 ft (2440 mm) EACH

Other sections containing
specific cross references:

801.17, Pg 800-17
801.18, Pg 800-19

General Instructions to Field Employees

Update Required? Y___ N___

By - Addition or Revision

Frequency Manual

Update Required? Y___ N___

By - Addition or Revision

Recurring Special Provisions
potentially affected:

None

Standard Sheets potentially affected:

See Item 18-11

Motion: M
Second: M
Ayes:
Nays:

Action: Withdrawn

Item No. 18-13
Mr. Wright
Date: 03/15/07

STANDARD DRAWINGS

The following are proposed new standard drawings:

614-RRGC-01, Railroad Crossing Details, HMA Header
614-RRGC-02, Railroad Crossing Details, RC Header
614-RRGC-03, Railroad Crossing Details, HMA Inter-Track Header
614-RRGC-04, Railroad Crossing Details, RC Inter-Track Header
614-RRGC-05, Railroad Crossing Details, Crown-Out Diagram

Other sections containing
specific cross references:

None

General Instructions to Field Employees

Update Required? Y___ N___

By - Addition or Revision

Frequency Manual

Update Required? Y___ N___

By - Addition or Revision

Recurring Special Provisions
potentially affected:

None

Standard Sheets potentially affected:

See Above

Motion: M
Second: M
Ayes:
Nays:

Action: Withdrawn

REVISION TO 2006 STANDARD SPECIFICATIONS

SECTION 614, BEGIN LINE 1, DELETE AND INSERT AS FOLLOWS:

SECTION 614 – CONCRETE HEADERS

614.01 Description

This work shall consist of the construction or reconstruction of ~~PCC~~ headers adjacent to railroad tracks, ~~bridges, and similar locations~~ in accordance with 105.03.

MATERIALS

614.02 Materials

Materials shall be in accordance with the following:

Concrete, Class C.....	702
Curing Materials.....	912.01
Dense Graded Subbase	302
HMA	402.02
Reinforcing Steel, Epoxy Coated	910.01(b)9

~~If the header is adjacent to cement concrete base or pavement, the header concrete shall be the same composition as that of the base or pavement header constructed monolithic with the base or pavement. If the adjacent base or pavement is thickened, that portion forming the thickening shall be considered as part of the header.~~

~~If the header is adjacent to asphalt pavement, the concrete shall be class A in accordance with 702 using class AP coarse aggregate.~~

CONSTRUCTION REQUIREMENTS

614.03 General

Construction of headers shall not begin until after the railroad has completed its work. Care shall be taken so as to not damage the railroad's work. The elevation of the headers shall match the elevation of the portion constructed by the railroad. Terminal joints shall be constructed in accordance with 503.

~~614.03~~ 614.04 PCC Headers

Construction shall be in accordance with the applicable provisions of ~~702~~ 302, 609, and with these requirements.

Welding shall be in accordance with 711.32.

~~Headers at railroad crossings shall be as shown on the plans.~~

614.05 Method of Measurement HMA Headers

Construction of HMA headers shall be in accordance with 402.

~~614.06 Reconstructed Cement Concrete Header~~

~~This work shall be in accordance with the plans. Round plug welds or rectangular shaped plug welds may be used to weld the steel angle to the existing steel edge protection. Round plug welds shall be a minimum of 1 in. (25 mm) diameter.~~

~~Welding shall be in accordance with 711.32.~~

614.05 614.06 Method of Measurement

Cement concrete header ~~and reconstructed cement concrete header~~ will be measured by the ~~linear foot (meter)~~ square yard (square meter). HMA surface, intermediate, and base will be measured by the ton (megagram) in accordance with 402.19. Dense graded subbase will be measured by the cubic yard (cubic meter) in accordance with 302.08. Terminal joints will be measured by the linear foot (meter) in accordance with 503.07.

614.06 614.07 Basis of Payment

~~The accepted quantities of this work~~ Cement concrete headers will be paid for at the contract unit price per ~~linear foot (meter)~~ square yard (square meter) for header, cement concrete, ~~of the type specified, or header, cement concrete, reconstruct,~~ complete in place. HMA surface, intermediate, and base will be paid for in accordance with 402.20. Dense graded subbase will be paid for in accordance with 302.09. Terminal joints will be paid for in accordance with 503.08.

Payment will be made under:

Pay Item	Pay Unit Symbol
Header, Cement Concrete, _____ Type	LFT (m) SYS (m2)
Header, Cement Concrete, Reconstruct _____	LFT (m)

The cost of *reinforcing steel*, edge protection, metal chairs, excavation, and necessary incidentals shall be included in the cost of ~~the pay items~~ header, cement concrete or in the cost of the HMA surface, intermediate, and base.

Other sections containing specific cross references:	General Instructions to Field Employees Update Required? Y___ N___ By - Addition or Revision
None	Frequency Manual Update Required? Y___ N___ By - Addition or Revision
Recurring Special Provisions potentially affected:	Standard Sheets potentially affected:
None	See Item 18-13
Motion: M Second: M Ayes: Nays:	Action: Withdrawn

REVISION TO STANDARD DRAWINGS

707-BEBP-01, Elastomeric Bearing Pads, Type 1 & 2
707-BEBP-02, Elastomeric Bearing Pads, Type 3 & 4
707-BEBP-03, Elastomeric Bearing Pads, Type 5, 6 & 7

The revisions removes a conflict between the Standard Drawings and the Specifications.

Other sections containing
specific cross references:

None

General Instructions to Field Employees

Update Required? No

By - Addition or Revision

Frequency Manual

Update Required? No

By - Addition or Revision

Recurring Special Provisions
potentially affected:

726-B-044

Standard Sheets potentially affected:

See Above

Motion: Ms. Rearick

Second: Mr. Heustis

Ayes: 9

Nays: 0

Action: Passed as submitted

Effective: September 2008 Letting

Received FHWA Approval? Yes

REVISION TO 2006 STANDARD SPECIFICATIONS

SECTION 710, BEGIN LINE 1, DELETE AND INSERT AS FOLLOWS:

**SECTION 710 – PATCHING CONCRETE STRUCTURES AND REPOINTING
MASONRY IN STRUCTURES**

710.01 Description

This work ~~shall~~ consists of *patching concrete piers, endbents, abutments, wingwalls, retaining walls, concrete structure surfaces other than bridge decks, patching concrete drainage structures and repointing concrete, rubble, dressed stone, or brick masonry structures with mortar* in accordance with 105.03.

Bridge deck patching shall be in accordance with 722.

710.02 Materials

Materials shall be in accordance with the following:

<i>Coarse Aggregate, Class A or Higher, Size No. 11</i>	<i>904</i>
<i>Concrete, Class A.....</i>	<i>701.02</i>
<i>Curing Compound.....</i>	<i>912.01</i>
<i>Epoxy Resin Adhesive</i>	<i>909.11</i>
<i>Fine Aggregate</i>	<i>904.01</i>
<i>Hydrated Lime</i>	<i>913.04</i>
<i>Masonry Cement</i>	<i>901.01(c)</i>
<i>Portland Cement.....</i>	<i>901.01(b)</i>
<i>Reinforcing Steel</i>	<i>910.01</i>

CONSTRUCTION REQUIREMENTS

710.03 Repointing Concrete Masonry Patching Concrete Structures

~~All honeycombed, weathered, or disintegrated areas in the concrete shall be cut out and thoroughly cleaned of all loose concrete, dirt, or other foreign material to a depth and over the area necessary to produce a firm and solid connecting surface for the adherence of the new mortar. This prepared surface shall be coated with epoxy resin adhesive in accordance with AASHTO M 235, class I, filled with mortar well driven in, and finished to meet approval. Where the surface is to be cleaned out to such depth and area that the new mortar does not stay in place without support, a form shall be placed over the area and the space so enclosed filled with well consolidated mortar. After the forms are removed the mortar shall be protected in accordance with 708.07.~~

(a) Concrete Removal

Areas of unsound concrete to be removed will be marked by the Engineer.

A saw cut shall be made perpendicular to the existing concrete surface a minimum of 1 in. (25 mm) outside marked areas. The cut shall be a minimum 1 in. (25 mm) deep or to the top of reinforcing steel, whichever is less.

Removal of unsound concrete shall not exceed 6 in. (150 mm) in depth and shall be performed by handchipping. Handchipping tools may be hand or mechanically driven. Jack hammers shall not be heavier than nominal 45 lb (20.5 kg) class and chipping

hammers shall not be heavier than nominal 15 lb (6.8 kg) class. Only chipping hammers shall be used when removing concrete within 1 in. (25 mm) of reinforcing steel. Mechanically driven tools shall be operated at a maximum angle of 45 degrees to concrete surfaces.

Where reinforcing steel has been exposed, concrete adjacent to the steel shall be removed to a minimum clearance of 1 in. (25 mm) around the entire periphery of the exposed steel. Exposed reinforcing steel shall not be damaged by removal operations. Reinforcing steel damaged by the Contractor shall be replaced.

Regardless of the method of removal, removal operations shall cease if sound concrete is being removed beyond the limits approved by the Engineer. Removal methods shall be adjusted to prevent unnecessary removal of sound concrete prior to resuming removal operations.

(b) Replacement of Reinforcing Steel

Existing reinforcing steel that has lost 50% or more of its original cross sectional area shall be removed and replaced with new reinforcing steel of the diameter of the original steel. Replacement reinforcing steel shall be lapped a minimum of 3 in. (75 mm) along existing reinforcing steel.

(c) Patching

After concrete removal operations are completed and just prior to placing patches, all patch areas shall be sandblasted to expose aggregates in concrete surfaces and to remove rust, residual concrete and laitance layers from reinforcing steel surfaces. All surfaces shall be free of dust, chips, water and foreign material to produce a firm, solid surface for adherence of patching concrete. Air lines for sandblasting and air cleaning shall be equipped with oil and water traps.

Surfaces of prepared cavities and all exposed reinforcing steel within the cavities shall be coated with epoxy resin adhesive in accordance with 722.06(a)1.

For patched areas that require forms, forms may be removed after 24 hr and surfaces cured in accordance with 702.22 or the forms may be left in place for 72 hr and no additional curing will be required. Patched areas that do not require forms shall be cured in accordance with 702.22.

Concrete patches shall be finished to match the texture and finish of abutting existing concrete.

710.04 Repointing Rubble Masonry

Joints in rubble masonry shall be cleaned of all loose mortar and foreign material. All spaces around the rubble aggregate, after being cleaned, shall be well filled with mortar and trowel finished. ~~If any of the~~ All loose rubble is loose, it shall be settled into place before the mortar has set.

710.05 Repointing Dressed Stone and Brick Masonry

~~The joints~~ Joints in the masonry shall be cleaned of all loose mortar and foreign material for a depth of at least twice the width of the joint. ~~The joints~~ Joints shall then be filled with mortar ~~well driven in~~ and neatly trowel finished.

710.06 Method of Measurement

~~Repointing~~ *Patching concrete structures and repointing rubble, dressed stone and brick masonry in structures will be measured by the square foot (square meter) of actual surface area of masonry repointed patching or repointing. Individual patches areas of less than 1 sq ft² (0.1 m²) in area will be considered as 1 sq ft² (0.1 m²). Areas greater than 1 ft² (0.1 m²) will be recorded as the actual measurement of the repaired area to the nearest 0.1 ft² (0.01 m²).*

710.07 Basis of Payment

The accepted quantities of ~~repointing~~ *patching concrete structures will be paid for at the contract unit price per square foot (square meter) complete in place. Repointing rubble, dressed stone, and brick masonry in structures will be paid for at the contract unit price per square foot (square meter) of repointed repointing masonry complete in place.*

Payment will be made under:

Pay Item

Pay Unit Symbol

<i>Patching Concrete Structures</i>	<i>SFT (m2)</i>
<i>Repointing Masonry in Structures</i>	<i>SFT (m2)</i>

Areas where patching concrete structures or repointing rubble, dressed stone, or brick masonry in structures exceeds an average of 4 in. (100 mm) in depth, the work shall be completed as extra work will be paid for at a price calculated by multiplying the contract unit price by 1.25. Payment will be made in accordance with 104.03.

The cost of removing the existing concrete or masonry cement, furnishing, hauling, and placing all materials, preparing the surface, and all necessary incidentals shall be included in the pay items in this section.

The cost of replacing damaged reinforcing steel shall be included in the cost of patching concrete structures.

REVISION TO 2006 STANDARD SPECIFICATIONS

SECTION 710, CONTINUED.

Other sections containing specific cross references:	General Instructions to Field Employees Update Required? No By - Addition or Revision
None	Frequency Manual Update Required? No By - Addition or Revision
Recurring Special Provisions potentially affected:	Standard Sheets potentially affected:
206-B-113 729-B-009	None
Motion: Ms. Rearick Second: Mr. Andrews Ayes: 9 Nays: 0	Action: Passed as submitted Effective: September 2007 Letting <u> x </u> 2009 Standards Specifications Book <u> </u> 2009 Standards Edition

Received FHWA Approval? Yes

REVISION TO 2006 STANDARD SPECIFICATIONS

SECTION 722, BEGIN LINE 105, DELETE AND INSERT AS FOLLOWS:

2. Bridge Floor

Following the clean up from the surface removal operation, areas of unsound concrete to be removed will be marked. Removal of the unsound concrete shall be performed by handchipping or hydrodemolition. Handchipping tools may be hand or mechanically driven. Jack hammers shall not be heavier than nominal 45 lb (20.5 kg) class and chipping hammers shall not be heavier than nominal 15 lb (6.8 kg) class. Only ~~handchipping tools~~ *chipping hammers* shall be used when removing concrete within 1 in. (25 mm) of reinforcing steel. Mechanically driven tools shall be operated at a maximum angle of 45 degrees from the bridge floor surface.

SECTION 722, BEGIN LINE 128, INSERT AS FOLLOWS:

Where *reinforcing steel has been exposed or* the bond between the existing concrete and reinforcing steel has been destroyed, the concrete adjacent to the steel shall be removed to a minimum clearance of 1 in. (25 mm) around the entire periphery of the exposed steel. If the concrete is unsound down to the top layer of bottom reinforcing steel, all of the concrete within the marked area shall be removed and the cavity shall require full depth patching in accordance with 722.06(a). Prepared cavities which are deeper than the level of the adjacent prepared deck surface, but are not full depth, shall require partial depth patching in accordance with 722.06(b). Prepared partial depth cavities shall be made full depth when directed. Exposed reinforcing steel shall not be damaged by the removal operation. Any damaged reinforcing steel shall be repaired as directed with no additional payment.

SECTION 722, BEGIN LINE 146, DELETE AND INSERT AS FOLLOWS:

(b) Cleaning

After the concrete removal operation is completed and just prior to placing the ~~patches or the~~ overlay, the entire deck shall be heavily sandblasted to expose fine and coarse aggregates and to remove unsound concrete or laitance layers from the surface. Exposed reinforcing steel and the concrete under and around the exposed steel shall be thoroughly cleaned by sandblasting. The surface shall be then cleaned free of all dust, chips, ~~and~~ water, *and foreign material to the extent necessary to produce a firm, solid surface for adherence of the new concrete.* ~~The final surface shall be free of oil, grease and water.~~ The air lines for sandblasting and air cleaning shall be equipped with oil traps.

REVISION TO 2006 STANDARD SPECIFICATIONS
SECTION 722, CONTINUED.

Other sections containing specific cross references:	General Instructions to Field Employees Update Required? No By - Addition or Revision
202.03(b), Pg 200-8	Frequency Manual
722.07, Pg 700-141	Update Required? No
722.13(d), Pg 700-146	By - Addition or Revision
Recurring Special Provisions potentially affected:	Standard Sheets potentially affected:
None	None
Motion: Ms. Rearick	Action: Passed as submitted
Second: Mr. Andrews	Effective:
Ayes: 9	<u> x </u> 2009 Standards Specifications Book
Nays: 0	<u> </u> 2009 Standards Edition

Received FHWA Approval? Yes

REVISION TO 2006 STANDARD SPECIFICATIONS

SECTION 801, BEGIN LINE 311, DELETE AND INSERT AS FOLLOWS:

801.10 Temporary Traffic Barriers

Temporary traffic barrier shall be one of the following four types as shown on the plans.

Type 1

Type 1 temporary traffic barriers shall be used to separate two-way traffic and shall be precast concrete in accordance with applicable requirements of 707 and 602 and as shown on the plans. Type 1 barriers may also be used to separate traffic from the work zone. The surfaces of individual precast units shall vary no more than 0.25 in. (6 mm) in 10 ft (3 m) from the specified cross section, as measured from a longitudinal straightedge. The maximum variation in the vertical and horizontal alignment of adjacent units shall be 0.25 in. (6 mm) across the joint, as measured from a 10 ft (3 m) longitudinal straightedge. Sections that have obvious defects or visual cracks shall not be used. Sections that develop any of these conditions during the contract shall be repaired with concrete or replaced within a reasonable amount of time.

Type 1 barrier units precast prior to 2003 shall not be used after January 1, 2012. Units precast after March 1, 2003 shall be clearly marked with the name or trademark of the manufacturer, the year of manufacture, and "INDOT". The markings shall be indented on an end or on the top of each barrier section. ~~Units precast prior to 2003 shall not be used after January 1, 2012.~~ Units precast after January 1, 2007 shall be from the Department's list of Certified Precast Concrete Producers.

Other sections containing specific cross references:	General Instructions to Field Employees
	Update Required? No
	By - Addition or Revision
801.10(e), Pg 800-10	Frequency Manual
	Update Required? No
	By - Addition or Revision
Recurring Special Provisions potentially affected:	Standard Sheets potentially affected:
801-T-163	None
Motion: Mr. Heustis	Action: Passed as submitted
Second: Mr. Walker	Effective: June 2007 Letting
Ayes: 9	<u> x </u> 2009 Standards Specifications Book
Nays: 0	<u> </u> 2009 Standards Edition

Received FHWA Approval? Yes

REVISION TO 2006 STANDARD SPECIFICATIONS

SECTION 105, BEGIN LINE 737, INSERT AS FOLLOWS:

All field offices shall be equipped with a table top dry ink copier machine using plain paper and capable of making full size copies of 11 in. x 17 in. (279 mm x 432 mm) originals. The copier shall be capable of reducing and increasing copy sizes. The copier shall have a self-feeding *paper* tray and *an automatic document feeder* and be capable of producing at least 12 copies per minute.

Other sections containing
specific cross references:

105.19, Pg 100-51
106.04, Pg 100-55

General Instructions to Field Employees

Update Required? No

By - Addition or Revision

Frequency Manual

Update Required? No

By - Addition or Revision

Recurring Special Provisions
potentially affected:

None

Standard Sheets potentially affected:

None

Motion: Mr. Kuchler
Second: Mr. Heustis
Ayes: 9
Nays: 0

Action: Passed as submitted
Effective: June 2007 Letting
___x___ 2009 Standards Specifications Book
_____ 2009 Standards Edition

Received FHWA Approval? Yes